

ON TWO INTERESTING NEW GENERA OF SCALE INSECT PARASITES.

BY L. O. HOWARD, WASHINGTON, D. C.

Nearly all the Chalcidid parasites of Coccidæ belong to the subfamilies Aphelininæ and Encyrtinæ. So universal is this rule that it is remarkable to rear anything else from a Coccid (excluding, of course, hyperparasites)*. One or two Mymarids and the species of the curious subfamily Signiphorinæ live in the eggs of scale insects, and we are just beginning to realize that there is a peculiar group of genera allied to the old subfamily Pireninæ which also have this habit.

The first of these insects to be recognized as a primary scale insect parasite was a species of the genus *Tomocera* described by the writer in 1880 and reared from *Lecanium oleæ* from California. This name in 1885 was changed to *Dilophogaster* on account of the occurrence in Thysanura of a genus *Tomocerus*. In the meantime, however, Cameron had erected for the same form, from specimens received from the Hawaiian Islands, his genus *Moranilla*. According to the present rules of classification, however, *Tomocera* may stand in spite of its identical etymological signification with *Tomocerus*.

Another of these genera was described by Dr. Riley in 1890 as *Ophelosia* from specimens reared from *Icerya purchasi* in Queensland. A third—Walker's genus *Eunotus*—has recently been found by Mr. W. G. Johnson to be parasitic upon *Lecanium* scales in Illinois, as pointed out by the writer in Technical Bulletin No. 1, Division of Entomology, U. S. Department of Agriculture, and a fourth—*Scutellista*, Mots.—has been found by Dr. Berlese to parasitize *Ceroplastes* scales in Italy. This form has been redescribed with synonymical notes by the writer in the "Revista di Patologia Vegetale."

Aside from the matter of tibial armature, these genera seem closely allied and to possess on the whole strong mutual affinities. The shape of the head, its acute occipital margin, the mesonotal characters, the 10-jointed (♀) and 9-jointed (♂) antennæ, the greatly enlarged second segment of the abdomen, together with other characters point to a subfamily not yet recognized in our classification of the Chalcididæ, and the uniform Coccid-feeding habit binds the group still more closely together.

* Representatives of *Pachyneuron*, *Euneura*, and *Hypsicamara* have been reared from Coccidæ, but those of *Pachyneuron* are almost certainly hyperparasites, and the others may be; while the species of *Tetrastichus* quite commonly so reared are undoubtedly secondary.

In view of these facts, the receipt of two additional allied genera, also Coccid-feeders, and undescribed, from Mr. W. Maskell, of New Zealand, becomes a matter of considerable interest.

APHOBETUS, n. g.

Female.—Antennæ 10-jointed, clavate, inserted just above clypeus, scape slender, not reaching to middle ocellus, pedicel long; three times as long as first funicle joint, funicle joints 2 to 5 increasing slightly in length and considerably in width, club ovate, slightly broader than funicle joint 5 and longer than 4 and 5 together. Eyes naked; parapsidal sutures meeting axillar sutures; scutellum broad at base, with a distinct transverse groove at apical third. Petiole broad, distinct, abdomen without the white basal tufts characteristic of *Tomocera*, second segment very long, three times as long as remaining segments together. Marginal vein of fore wings somewhat longer than stigmal, postmarginal evident, but shorter than stigmal; basal nervure distinct. Hind wings broad and furnished with a strong basal vein running nearly at right angles into disc of wing for some little distance at extremity of submarginal. Hind coxæ somewhat swollen, middle tibiæ with a moderate spur, hind tibiæ with a very long spur, a little longer than first tarsal joint.

Male.—Differs mainly in antennæ, which are 9-jointed; scape longer than in the female, pedicel somewhat swollen, joints 1 to 4 of funicle with long hairs, strongly incised from above at extremities and each joint slightly pedicellate; joint 1 longest, twice as long as pedicel, joints 2, 3 and 4 each becoming shorter, club somewhat ovate, with its first joint distinctly separated and as a whole longer than funicle joint 4, but shorter than 3 and 4 together. Body flat, abdomen somewhat elongate, second segment somewhat longer than remaining joints together.

Aphobetus Maskelli, n sp.

Female.—Length, 1.16 mm.; expanse, 2.4 mm.; greatest width of fore wings, .51 mm. General colour blue-black, slightly metallic, glistening. Face with faint shallow, sparse depressions; mesoscutum delicately shagreened, abdomen smooth, shining, hairs of mesonotum black, fimbria of metanotum rather sparse, grayish; pleura shining; antennæ honey-yellow, with pedicel and scape above darker; all coxæ and femora black, the latter yellowish at tip; all tibiæ dark in middle, yellowish at either end; wing veins dark brown, except basal vein of fore wings, which is lighter; fore wings with circular fuscous patch occupying centre of wing.

Male.—Somewhat slenderer than female, but about same length; sculpturing identical, antennæ jet black, legs coloured as with female.

One female, four males, reared by W. M. Maskell, New Zealand, from *Ctenochiton viridis*. This is probably the insect figured by Mr. Maskell on Plate XXIII. of his "Scale Insects of New Zealand," 1887.

ANYSIS, n. g.

Female.—Antennæ as with *Aphobetus*, except that funicle joint 2 is twice as long as 1; 3, 4 and 5 subequal in length, increasing in width, and each slightly shorter than 2. Eyes naked; head very broad; occiput strongly concave, its superior margin acute. Thorax well arched; parapsidal sutures meeting axillar sutures; scutellum broad at base, somewhat lengthened, extending over metanotum to vertical plane of base of abdomen, not cross-furrowed. Petiole distinct but very short; abdomen without basal tufts; second segment scarcely half the length of abdomen. Marginal vein of fore wings three times longer than stigmal, postmarginal about as long as stigmal or slightly shorter; basal nervure not distinct. Basal nervure of hind wings extending at an acute angle toward base of wing. Spur of hind tibia short.

Anysis australiensis, n. sp.

Female.—Length, 1.7 mm.; expanse, 3.8 mm.; greatest width of fore wings, .74 mm. General colour blue-black, slightly metallic, glistening. Head and thorax with short, sparse, yellowish pile; face delicately shagreened and with fine sparse punctures; mesonotum similarly punctured; metanotum, pleura, and abdomen smooth; metanotum with a median longitudinal rounded carina. Antennæ light brown, tip of club darker, pedicel and tip of scape above black; all femora nearly black in middle, lighter at either end; tibiæ brown. Wing veins dark brown, fore wings infuscated, hind wings hyaline.

Three females received from Mr. W. M. Maskell with the following note: "With a very curious new Coccid from West Australia, genus not yet determined; probably allied to *Eriococcus*."

MISS ORMEROD, who was for some years Consulting Entomologist to the Government, her knowledge of the insect world being unapproached by any other living authority, has now received the distinction of being appointed an examiner in this branch of agricultural science at Edinburgh University.—*Illustrated London News*.